Message

From: Lisa Rector [lrector@nescaum.org]
Sent: 4/3/2020 7:51:17 PM
To: Johnson, Steffan [johnson.steffan@epa.gov]
Subject: RE: proportionality

Thanks, I am assuming this should have raised flags.

From: Johnson, Steffan <johnson.steffan@epa.gov>
Sent: Friday, April 3, 2020 3:51 PM
To: Toney, Mike <Toney.Mike@epa.gov>
Cc: Lisa Rector <lrector@nescaum.org>
Subject: Re: proportionality

Lisa,

That report and this question have not been to my shop in RTP before.

Stef

Sent from my iPhone

> On Apr 3, 2020, at 3:26 PM, Toney, Mike <Toney.Mike@epa.gov> wrote:
>
> No,
>
> I never seen this before.
>
> **From:** Lisa Rector [mailto:lrector@nescaum.org]
> **Sent:** Friday, April 03, 2020 3:24 PM
> **To:** Toney, Mike <Toney.Mike@epa.gov>; Johnson, Steffan <johnson.steffan@epa.gov>
> **Subject:** RE: proportionality
>
> Did he contact you for this test report item below?
>
> Test procedures followed to produce a Category IV burn; heat draw was adjusted to approximately 230,000 BTU's. Observed burn rate was calculated at 14.48 kg/h. Emissions results were calculated using particulate sampling from Oak cordwood, on a hot to hot cycle. Heat demand water temperature set to call for heat at 165 degrees Fahrenheit and to go off demand mode at 185 degrees Fahrenheit. During a CAT IV burn test, large amounts of water vapor are released into the dilution tunnel causing plugging of the 47 mm sample filters. If not caught right away, sample rates are reduced to a point that cause proportionate rates to fall outside the specified range. During this test, two 10-minute data points were calculated to be outside the specified limit for proportional rate. Total test time of the CAT IV test was 419 minutes, total emission catch on filter train B was 26.0 mg. This calculates to 0.062 milligrams of catch per minute, total time proportional rates were out of specified range was 17 minutes. This calculates to 1.054 (17 * 0.062) milligrams of catch that are affected by the reduced sample rate. Emissions results for the CAT IV test with the 17 minutes of proportional rates outside specified limits is 0.08 lb/mmBTU output. If the calculated emissions catch of 1.054 mg affected by the proportional rates is multiplied by a factor of 3 (3 * 1.054) and added to the final catch this only increases final emissions

results to 0.09 lb/mmBTU output. It was determined that emissions would have required to increase by 19 times during the 17 minutes to cause the emissions results to exceed 0.15 lb/mmBTU output. Carbon Monoxide emissions during the same 17-minute time period reflect clean combustion. Based on these findings the CAT IV test was deemed acceptable for inclusion into the weighted average. No additional sampling anomalies occurred, this test run was determined to be valid for inclusion in the weighted average.

From: Toney, Mike <Toney.Mike@epa.gov>
Sent: Friday, April 3, 2020 3:21 PM
To: Johnson, Steffan <johnson.steffan@epa.gov>; Lisa Rector <lrector@nescaum.org>
Subject: RE: proportionality

Occasionally

Rafael, will call me with something similar with a data point be off a little for example the water return temperature for a HH with one or two data points below the 120 value. I ask him what are the emissions. If the emissions are really clean I tell him it is his call but make the lab aware that next time you want a retest in that category.

From: Johnson, Steffan
Sent: Friday, April 03, 2020 2:35 PM
To: Lisa Rector <lrector@nescaum.org>
Cc: Toney, Mike <Toney.Mike@epa.gov>
Subject: Re: proportionality

Lisa,

For a compliance test, if the data are outside of the method prescribed range/criteria, the test is invalid.

Helpful?

Stef

Sent from my iPhone

> On Apr 3, 2020, at 1:57 PM, Lisa Rector <lrector@nescaum.org> wrote:
>
> Thanks Mike for your response. I was requesting information for certification purposes rather than research data.
>
> I hope you have a great weekend.
>
> Lisa
>
> ---
>
> **From:** Toney, Mike <Toney.Mike@epa.gov>
> **Sent:** Friday, April 3, 2020 1:36 PM
> **To:** Lisa Rector <lrector@nescaum.org>
> **Cc:** Johnson, Steffan <johnson.steffan@epa.gov>
> **Subject:** proportionality

Hi Lisa,

I am assuming you are using ASTM E2515 for particulate sampling. The acceptable range in the method is within 10% of the initial proportionality at the beginning of the test. At the end of the test if you are out of this 10% requirement the test is not valid. Keep in mind proportionality is calculated at each time interval data is collected. So one can go back and look at the data point to see where it when off to see what happened. There is nothing in 2515 that tells you what to do if you are outside this range other than stay within 10%. If you are doing research you can make a judgement call if this is critical enough to warrant a retest, 1 to three or 4 data points maybe acceptable for your research. But if there are multiple recordings outside your acceptance range , I would make a judgement call to stop the test and look at the equipment , something could be clogged or pump going bad slowly etc. This should be cited in your data quality objectives. I hope this has helped you. Remember in the original EPA Method 28 the requirement was +/- 20%, so between 80 to 120 percent was acceptable.